

lockseam pipes, with seams and corrugations running helically (or spirally) around the pipe. Small diameters of six, eight, ten inches, etc. have a pitch of one and one-half inches by one-quarter inch depth, while larger sizes *with diameters up to twelve feet*, have a two inch pitch by one-half inch depth, two and two-thirds inch pitch by one-half inch depth and three inch pitch by one inch depth. Holcomb then goes on to discuss tables used for the selection of pipe based on the load factors encountered for various installations. In the preferred embodiments portion of the patent to Holcomb, tables A and B are provided to define the Holcomb invention with pipe diameters up to 60 inches and 108 inches respectively. The applicant has included photo copies of various pages of the Handbook of Steel Drainage and Highway Construction Products (Second Edition, 1971) for the examiners reference.

The patent issued to Holcomb is a *misunderstood reference*, it does not teach what the examiner has relied upon it as supposedly teaching, only pipe sizes up to *twelve feet* in diameter have been produced with spiral pipe. *The Holcomb patent does not teach of a spirally formed pipe above twelve feet in diameter and therefore is not applicable, Claims 1-4 are patentable over this prior art reference under 35 U.S.C. § 102(b).*

The Holcomb patent actually *teaches away* from the suggestion of a spirally formed pipe above twelve feet in diameter, in as much as the invention identifies 60 inch and 108 inch diameters as the largest sizes considered as the invention. *The Holcomb patent teaches away from a spirally formed pipe above twelve feet in diameter, in as much as it only teaches of pipe up to 108 inch in diameter, it therefore is not applicable, Claims 1-4 are patentable over this prior art reference under 35 U.S.C. § 102(b).*

The invention of Holcomb is to substitute fewer corrugations than standard spiral pipe to save on material costs. In many cases the pipe is much stronger than it needs to be for a given structural application. Holcomb rightly determined that he could produce a pipe that would be strong enough for many applications with fewer corrugations. The nature of Holcomb's invention is to produce pipes smaller in size than prevailing industry standards, since the reduction in the number of corrugations reduces the structural load the pipes can handle. Pipes with fewer corrugations will be acceptable for many applications, but certainly would not be allowed in the maximum size

range, this is why Holcomb's largest size is 108 inches in diameter, not twelve feet. It is necessary *to conclude then that the prior art of Holcomb lacks any suggestion that the reference should be modified in a manner required to meet the claims, Claims 1-4 are therefore patentable over this reference under 35 U.S.C. § 102(b).*

#### **Claims Rejections Under - 35 USC § 103**

Claims 5-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Holcomb in view of Peterson (U.S. Patent No. 4,605,338). It is stated that the patent to Holcomb discloses all of the recited structure with the exception of reshaping the tube as an arch. The patent to Peterson discloses the recited convoluted pipe formed of ductile material where the tube can be formed with a circular shape as shown in figure 8, or can be reshaped to an arch shape as shown in figures 4 and 6, where the corrugated pipe is used as culverts having large diameters. It is stated that it would have been obvious to one skilled in the art to modify the shape of the pipe in Holcomb to be reshaped into an arch shape to provide a different profile which can be stronger as suggested by Peterson.

As previously identified the patent to Holcomb does not teach of a spirally formed pipe above twelve feet (144 inches) in diameter and therefore *is not applicable, Claims 1-4 are patentable over the prior art reference of Holcomb under 35 U.S.C. § 102(b). Claims 5-10 are therefore patentable over Holcomb in view of Peterson under 35 U.S.C. § 103(a).*

Additionally, the tube shown in the Peterson reference as a circular shape in figure 8, and then shown as an arch shape in figures 4 and 6 clearly have circumferential seams, or corrugations. Peterson makes no reference to spiral pipe. The invention of Peterson requires significant fabrication, which suggests by implication it would logically be applied to fabricated Structural Plate Pipe. The prior art reference of Peterson and Holcomb do not contain any suggestion (express or implied) that they be combined, or that they be combined in the manner suggested, Claims 5-10 are therefore patentable over these prior art references *under 35 U.S.C. § 103(a) as it is an unsuggested combination.*

A note about the new invention of Large Diameter Spiral Pipe and its manufacture:

The applicant has recently received U.S. Patent No. 6,000,261 for a New Portable Spiral Pipe Manufacturing System. This new system allows for the production of pipe at the jobsite, the size restrictions inherent to factory machinery have been eliminated. This new system is capable of producing larger diameter spiral pipes than have ever existed before!

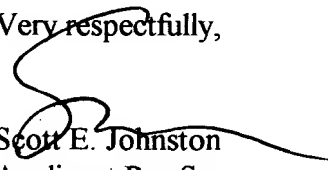
### **Conclusion**

For all of the above reasons, the applicant submits that the specification and claims are now in proper form, and that the claims all define patentably over the prior art. Therefore the applicant submits that this application is now in condition for allowance, which action is now respectfully requested.

### **Conditional Request For Constructive Assistance**

Applicant has amended the specification and claims of this application so that they are proper, definite, and define novel structure which is also unobvious. If for any reason this application is not believed to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. § 706.03(d) and § 707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible.

Very respectfully,

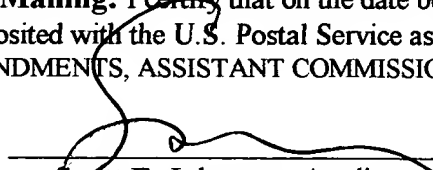
  
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July 28, 2000

  
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Scott E. Johnston, Applicant